

What is claimed is:

1. A method for providing hazardous incident decision support and training, comprising:

acquiring observed signs and symptoms data from a user interface;

acquiring agent characteristic data from records in a database, wherein each record
5 includes data representative of a known hazardous agent; and

performing an initial agent identification by comparing the observed signs and
symptoms data acquired from the user interface with the agent characteristic data for each
record in the database.

2. The method of claim 1, wherein the comparison of the observed signs and symptoms data
with the agent characteristic data for each record in the database, further includes assigning
a unit value to each of the observed signs and symptoms data that match the agent
characteristic data and performing a summation of the assigned unit values to obtain a
relative score for each record in the database

3. The method of claim 2, wherein the comparison of the observed signs and symptoms data
with the agent characteristic data for each record in the database, further includes
multiplying each assigned unit value by a weight factor before performing the summation of
assigned unit values to obtain a relative score.

4. The method of claim 3, wherein the observed signs and symptoms data includes time-to-
onset data.

5. The method of claim 4, wherein the comparison of the observed signs and symptoms data with the agent characteristic data for each record in the database, further includes subtracting a value from the relative score for each observed sign and symptom that does not have a match in the corresponding database record.

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6. The method of claim 5, further including acquiring sensor input data, and performing an improved agent identification using the acquired sensor data.

7. The method of claim 5, further including acquiring sampling data, and performing an improved agent identification using the acquired sampling data.

8. The method of claim 5, further including providing training information and queries.

9. A method for providing hazardous incident decision support and training, comprising:

acquiring a situation definition from a user interface;

acquiring time data from a clock; and

performing a time-dependent hazard assessment in response to the situation definition and time data, wherein the time-dependent hazard assessment is updated with elapsed time.

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10. The method of claim 9, further including acquiring a hazard dose and determining an occupational safety factor as a function of time, wherein the occupational safety factor is determined by integration of the hazard dose over time.

11. The method of claim 10, further including acquiring a safety limit, and performing a comparison of the occupational safety factor with the safety limit.

12. The method of claim 11, further including providing a warning when the occupational safety factor exceeds the safety limit.

13. The method of claim 12, further including acquiring a time limit and operational start time, and maintaining a comparison of the operational elapsed time with the time limit wherein the operation elapsed time is determined as the difference between the time acquired from the clock and the operational start time.

14. The method of claim 13, further including providing a warning when the operational time exceeds the time limit.

15. The method of claim 14, further including providing training information and queries.

16. A system for providing hazardous incident decision support and training, comprising:

a user interface component operative to received a situation definition;

a clock; and

a time-dependent hazard assessment component responsive to the situation definition and clock.

17. The system of claim 16, wherein the user interface component is operative to received observed signs and symptoms data.

18. The system of claim 17, wherein the time-dependent hazard assessment component includes a database of signs and symptoms representative of known agents, and a comparator operative to compare the observed signs and symptoms data obtained from the user interface with the database of signs and symptoms representative of known agents.

19. The system of claim 18, further comprising a sensor for obtaining agent detection data, an input means for obtaining sampling data, and an agent identification component responsive to the sensor and input means for performing an agent identification.

20. The system of claim 19, further including a hazard source assessment responsive to the agent identification component for providing concentration versus time predictive data.

21. The system of claim 20, further including a decision aid component operative to provide decision advice and decision prompts in response to the situation definition and time-dependent hazard assessment, wherein decision data are obtain through user response to the decision prompts.

22. The system of claim 21, further including a training component response to the user interface component, clock, and time-dependent hazard assessment component.

23. A computer-readable medium having computer-executable instructions for performing a method, comprising:

acquiring observed signs and symptoms data from a user interface;

acquiring agent characteristic data from records in a database, wherein each record includes data representative of a known hazardous agent; and

performing an initial agent identification by comparing the observed signs and symptoms data acquired from the user interface with the agent characteristic data for each record in the database.

24. The computer-readable medium of claim 23, wherein the computer-executable instructions for performing a method, further includes assigning a unit value to each of the observed signs and symptoms data that match the agent characteristic data and performing a summation of the assigned unit values to obtain a relative score for each record in the database.

25. The computer-readable medium of claim 24, wherein the computer-executable instructions for performing a method, further includes multiplying each assigned unit value by a weight factor before performing the summation of assigned unit values to obtain a relative score.

26. The computer-readable medium of claim 25, wherein the observed signs and symptoms data of the computer-executable instructions for performing a method further includes time-to-onset data.

27. The computer-readable medium of claim 26, wherein the computer-executable instructions for performing a method further includes subtracting a value from the relative score for each

observed sign and symptom that does not have a match in the corresponding database record.

5 28. The computer-readable medium of claim 27, wherein the computer-executable instructions for performing a method further includes acquiring sensor input data, and performing an improved agent identification using the acquired sensor data.

10 29. The computer-readable medium of claim 27, wherein the computer-executable instructions for performing a method further includes acquiring sampling data, and performing an improved agent identification using the acquired sampling data.

30. The computer-readable medium of claim 27, wherein the computer-executable instructions for performing a method further includes providing training information and queries.

15 31. A computer-readable medium having computer-executable instructions for performing a method, comprising:

acquiring a situation definition from a user interface;

acquiring time data from a clock; and

20 performing a time-dependent hazard assessment in response to the situation definition and time data, wherein the time-dependent hazard assessment is updated with elapsed time.

32. The computer-readable medium of claim 31, wherein the computer-executable instructions for performing a method further includes acquiring a hazard dose and determining an

occupational safety factor as a function of elapsed time, wherein the occupational safety factor is determined by integration of the hazard dose over time.

- 5 33. The computer-readable medium of claim 32, wherein the computer-executable instructions for performing a method further includes the steps of:

acquiring a safety limit;

performing a comparison of the occupational safety factor with the safety limit; and
providing a warning when the occupational safety factor exceeds the safety limit.

- 10 34. The computer-readable medium of claim 33, wherein the computer-executable instructions for performing a method further includes:

acquiring a time limit;

acquiring an operational start time;

15 maintaining a comparison of the operational elapsed time with the time limit,
wherein the operation elapsed time is determined as the difference between the time acquired from the clock and the operational start time; and

providing a warning when the operational time exceeds the time limit.

- 20 35. The computer-readable medium of claim 34, wherein the computer-executable instructions for performing a method further includes providing training information, and providing queries.

36. In a computer system having a graphical user interface including a display and a selection device, a method of providing and selecting from a menu on the display, the method comprising:

retrieving a set of menu entries for the menu, each of the menu entries representing a hazardous incident characteristic;

displaying the set of menu entries on the display;

receiving a menu entry selection signal indicative of the selection device pointing at a selected menu entry from the set of menu entries; and

in response to the signal, performing a hazard assessment for an incident represented by the selected menu entries.

37. The computer system of claim 36, wherein the menu entries include linguistic variables and numeric ranges.

38. The computer system of claim 36, wherein the menu entries represent signs, symptoms, and times-of-onsets.

39. The computer system of claim 36, wherein the menu entries represent source type, amount of agent release, and room descriptive data including room dimensions and ventilation.

40. The computer system of claim 36, wherein the menu entries represent hazard predictive tools for use in calculating concentration versus time data.

41. The computer system of claim 36, wherein the menu entries represent asset management categories.
42. The computer system of claim 41, wherein the asset management categories include detection and sampling, hazard mitigation, decontamination, medical, and protective clothing.